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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,702	12/31/2003	Anees Narsinh	134169	3818
35114	7590	07/31/2007	EXAMINER	
ALCATEL LUCENT (FKA ALCATEL INTERNETWORKING, INC.) INTELLECTUAL PROPERTY & STANDARDS 3400 W. PLANO PARKWAY, MS LEGL2 PLANO, TX 75075			DUONG, FRANK	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/750,702

Applicant(s)

NARSINH ET AL.

Examiner

Frank Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is a response to communications dated 12/31/03. Claims 1-14 are pending in the application.

Information Disclosure Statement

2. The information disclosure statement filed 03/09/07 complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. It has been considered and placed in the application file.

Claim Objections

3. Claim 1 is objected to because of the following informalities:

As per claim 1, line 5, the term "operatively the traffic policer" should be changed --operatively coupled to the traffic policer--.

Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 2-9, 11-12 and 14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2-12 of copending Application No. 10/751,099. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following rationales:

Claim 2 of the instant application is a representative claim and it calls for:

A switching device comprising:

one or more physical layer interfaces for receiving a plurality of frames from a communication network;

a plurality of data link layer processors, wherein each data link layer processor comprises:

one or more MACs, wherein each MAC is operatively coupled to a physical layer interface; and

a traffic policer, operatively coupled to the one or more MACs, for discarding one or more of the plurality of frames received from the MACs that exceed one or more bandwidth parameters; and

a network processor, operatively coupled to the plurality of data link layer processors, for routing the frames received from the plurality of data link layer processors.

Claim 2 of the Copending application '099 is a representative claim and it calls for:

A switching device comprising:
one or more physical layer interfaces for transmitting frames to a communication network;

a network processor for routing the frames towards the one or more physical layer interfaces; and

a plurality of data link layer processors, wherein each data link layer processor comprises: one or more MACs, wherein each MAC is operatively coupled to a physical layer interface; and

a traffic shaper, operatively coupled to the one or more MACs, for discarding one or more frames from the network processor that exceed one or more bandwidth parameters prior to transmission to the MACs.

A careful review of the claim language of the above two representative claims render the following rationales:

Claim 2 of the instant application essentially encompasses the claimed invention of claim 2 of the '099 copending application. There is a mere difference in the usage of

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the terms "*a traffic policer*" and "*a traffic shaper*" as depicted in the bolded words above. However, the "*traffic policer*" and "*traffic shaper*" perform the same function and it is used interchangeably in the specification or in the art. Therefore, it is deemed to be obvious to those skilled in art to recognize and contemplate the usage of such terms interchangeably.

As for the dependent claims 2-9, 11-12 and 14 of the instant application, they are corresponding to claims 2-12 of the '099 copending application for the same rationales discussed above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. Claims 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/751,099 in view of Allen et al (IBM PowerNP network processor: Hardware, software, and applications, IBM J. RES. & DEV. VOL. 47 NO. 2/3, pages 177-193, May 2003) (hereinafter "Allen").

Claim 1 of the '099 copending application claims:

A data link layer processor comprising: one or more media access controllers (MACs); a traffic shaper, operatively coupled to the one or more MACs, for discarding frames received from the MACs that exceed a bandwidth

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parameter. Claim 1 of the copending application fails to teach “a MAC buffer, operatively coupled to the traffic policer, for buffering allowed frames received from the traffic policer”. However, such limitation lacks thereof is well known and taught by Allen.

In an analogous art, Allen teaches a network processor comprising, among other things, the limitation of “a MAC buffer (*Figure 4; Ingress data store*), operatively coupled to the traffic policer, for buffering allowed frames received from the traffic policer (see *description pertaining Data flow and traffic management on page 181*).”

Thus, it would have been obvious to those skilled in the art at the time of the invention to incorporate Allen’s teaching into claim 1 of the ‘099 copending application to arrive the claimed invention with a motivation to provide high flexibility and performance in dealing with associated high packet rates (*Allen, page 177, left column*).

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Bass et al (USP 6,404,752) (hereinafter “Bass”).

Regarding **claim 1**, in accordance with Allen reference entirety, Allen shows a data link layer processor (*Figure 1 and accompanied description begins col. 6, line 27 and thereafter*) comprising:

one or more media access controllers (MACs) (*Figure 1; 14*) (*see description pertaining Physical MAC multiplexer begins at col. 6, lines 39-40 and thereafter*);

a traffic policer (*Figure 1; EDS-UP*), operatively coupled to the one or more MACs (*see Figure 1 for connection details*), for discarding frames received from the MACs that exceed a bandwidth parameter (*see description pertaining Data flow and traffic management begins at col. 7, line 17 and thereafter*); and

a MAC buffer (*Figure 1; Ingress data store*), operatively coupled to the traffic policer, for buffering allowed frames received from the traffic policer (*see description pertaining Data flow and traffic management begins at col. 7, line 17 and thereafter*).

Regarding **claim 2**, in accordance with Bass reference entirety, Bass shows a switching device (*Figure 1*) comprising:

one or more physical layer interfaces for receiving a plurality of frames from a communication network (*see Figure 1 and the description of physical layer devices describes at col. 6, lines 49-40 and thereafter*);

a plurality of data link layer processors (*Figure 1 depicting Ingress EDS-UP and Egress EDS-DN*), wherein each data link layer processor comprises:

one or more MACs, wherein each MAC is operatively coupled to a physical layer interface (*Figure 1; 38*) (*see description pertaining element 38 begins at col. 6, lines 58-59 and thereafter*); and

a traffic policer, operatively coupled to the one or more MACs, for discarding one or more of the plurality of frames received from the MACs that exceed one or more bandwidth parameters (*see description pertaining Data flow and traffic management at col. 7, line 17 and thereafter*); and

a network processor (*Figure 1; EPC*), operatively coupled to the plurality of data link layer processors (*see Figure 1 for connection details*), for routing the frames received from the plurality of data link layer processors (*see description pertaining Embedded Processor Complex (EPC) begins at col. 7, line 21 and thereafter*).

Regarding **claim 3**, in addition to features recited in base claim 2 (see rationales discussed above), Bass also discloses wherein the traffic policer discards the one or more of the plurality of frames in accordance with a Three Color Marker (TCM) algorithm (*see col. 26, lines 39-46*).

Regarding **claim 4**, in addition to features recited in base claim 3 (see rationales discussed above), Bass also discloses wherein the TCM algorithm is selected from the group consisting of: single rate TCM, two rate TCM, and a combination thereof (*see col. 26, lines 39-46*).

Regarding **claim 5**, in addition to features recited in base claim 2 (see rationales discussed above), Bass also discloses wherein the traffic policer comprises:

an ingress meter module for determining a flow rate associated with the plurality of frames received by the associated data link layer processor (*Figure 1; Ingress DF invokes flow control is discussed at col. 11, lines 41-50 and thereafter*); and

a discard control logic for selectively discarding the one or more frames based upon the flow rate and the one or more bandwidth parameters (*Figure 1; traffic management software uses the information about the congestion state for flow control to include discarding packet is discussed at col. 11, lines 41-50 and thereafter*).

Regarding **claim 6**, in addition to features recited in base claim 5 (see rationales discussed above), Bass also discloses wherein the traffic policer further comprises a marker module for marking the plurality of frames in accordance with a TCM algorithm (*see col. 26, lines 39-46*).

Regarding **claim 7**, in addition to features recited in base claim 6 (see rationales discussed above), Bass also discloses wherein the one or more bandwidth parameters comprise a committed information rate (CIR) and an excess burst size (EBS) (*see col. 26, lines 39-46.. The CIR and EBS parameters are the inherent traffic parameters in the srTCM and trTCM*).

Regarding **claim 8**, in addition to features recited in base claim 2 (see rationales discussed above), Bass also discloses wherein the traffic policer comprises a flow search engine for classifying the plurality of frames based upon one or more properties associated with the frames (*classifier hardware assisted discussed at col. 9, line 32 and thereafter*).

Regarding **claim 9** in addition to features recited in base claim 8 (see rationales discussed above), Allen also discloses wherein the flow search engine comprises a content addressable memory (CAM) (*col. 6, lines 62-63 and thereafter*).

Regarding **claim 10** in addition to features recited in base claim 8 (see rationales discussed above), Bass also discloses wherein one or more properties comprise a source port, a VLAN tag state, a VLAN identifier, and a VLAN tag control information (TCI) field (*VLAN is discussed at col. 8, lines 15-61 and thereafter*).

Regarding **claim 11** in addition to features recited in base claim 8 (see rationales discussed above), Bass also discloses wherein the CAM associated with each of the plurality of data link layer processors consists of QoS rules pertaining to the associated plurality of physical layer interfaces (*see Fig. 13 and the description begins at col. 24, line 36 and thereafter*).

Regarding **claim 12** in addition to features recited in base claim 2 (see rationales discussed above), Bass also discloses wherein data link layer processors are media access controller (MAC) processors (*see Fig. 1 and description at col. 4, lines 59-60 and thereafter*).

Regarding **claim 13** in addition to features recited in base claim 12 (see rationales discussed above), Bass also discloses wherein each of the MAC processors further comprises a MAC buffer for buffering frames not discard by the traffic policer (*see Figure 1; data store*).

Regarding **claim 14** in addition to features recited in base claim 2 (see rationales discussed above), Bass also discloses wherein the switching device is selected from the group consisting of: a router, a multi-layer switching device, and a switch blade (*see Fig. 1 or 18 and description begins at col. 5, lines 60-61 and thereafter*).

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7. Claims 1-14 are rejected under 35 U.S.C. 102(a) as being anticipated by Allen et al (IBM PowerNP network processor: Hardware, software, and applications, IBM J. RES. & DEV. VOL. 47 NO. 2/3, pages 177-193, May 2003) (hereinafter "Allen").

Regarding **claim 1**, in accordance with Allen reference entirety, Allen shows a data link layer processor (*Figure 4 and accompanied description begins on page 180 and thereafter*) comprising:

one or more media access controllers (MACs) (*Figure 4; DMU-A - DMU-D*) (see *description pertaining Physical MAC multiplexer on page 180*);

a traffic policer (*Figure 4; Ingress DF*), operatively coupled to the one or more MACs (see *Figure 4 for connection details*), for discarding frames received from the MACs that exceed a bandwidth parameter (see *description pertaining Data flow and traffic management on page 181*); and

a MAC buffer (*Figure 4; Ingress data store*), operatively coupled to the traffic policer, for buffering allowed frames received from the traffic policer (see *description pertaining Data flow and traffic management on page 181*).

Regarding **claim 2**, in accordance with Allen reference entirety, Allen shows a switching device (*Figure 4*) comprising:

one or more physical layer interfaces for receiving a plurality of frames from a communication network (see *Figure 4 and the description of physical layer devices describes on page 180, Physical MAC multiplexer section*);

a plurality of data link layer processors (*Figure 4 depicting Ingress EDS and Egress EDS*), wherein each data link layer processor comprises:

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one or more MACs, wherein each MAC is operatively coupled to a physical layer interface (*Figure 4; DMU-A - DMU-D*) (see description pertaining *Physical MAC multiplexer* on page 180); and

a traffic policer, operatively coupled to the one or more MACs, for discarding one or more of the plurality of frames received from the MACs that exceed one or more bandwidth parameters (see description pertaining *Data flow and traffic management* on page 181); and

a network processor (*Figure 4; EPC*), operatively coupled to the plurality of data link layer processors (see *Figure 4* for connection details), for routing the frames received from the plurality of data link layer processors (see description pertaining *Embedded Processor Complex (EPC)* begins on page 181 and thereafter).

Regarding **claim 3**, in addition to features recited in base claim 2 (see rationales discussed above), Allen also discloses wherein the traffic policer discards the one or more of the plurality of frames in accordance with a Three Color Marker (TCM) algorithm (see page 183, right column, discussion pertaining “single-rate three-color-marker” and “two-rate-three-color-marker”).

Regarding **claim 4**, in addition to features recited in base claim 3 (see rationales discussed above), Allen also discloses wherein the TCM algorithm is selected from the group consisting of: single rate TCM, two rate TCM, and a combination thereof (see page 183, right column, discussion pertaining “single-rate three-color-marker” and “two-rate-three-color-marker”).

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Regarding **claim 5**, in addition to features recited in base claim 2 (see rationales discussed above), Allen also discloses wherein the traffic policer comprises:

an ingress meter module for determining a flow rate associated with the plurality of frames received by the associated data link layer processor (*Figure 4; Ingress DF invokes flow control is discussed on page 181, right column*); and

a discard control logic for selectively discarding the one or more frames based upon the flow rate and the one or more bandwidth parameters (*Figure 4; traffic management software uses the information about the congestion state for flow control to include discarding packet is discussed on page 181, right column*).

Regarding **claim 6**, in addition to features recited in base claim 5 (see rationales discussed above), Allen also discloses wherein the traffic policer further comprises a marker module for marking the plurality of frames in accordance with a TCM algorithm (see page 183, right column, discussion pertaining "single-rate three-color-marker" and "two-rate-three-color-marker").

Regarding **claim 7**, in addition to features recited in base claim 6 (see rationales discussed above), Allen also discloses wherein the one or more bandwidth parameters comprise a committed information rate (CIR) and an excess burst size (EBS) (see page 183, right column, discussion pertaining "single-rate three-color-marker" (srTCM) and "two-rate-three-color-marker" (trTCM). The CIR and EBS parameters are the inherent traffic parameters in the srTCM and trTCM).

Regarding **claim 8**, in addition to features recited in base claim 2 (see rationales discussed above), Allen also discloses wherein the traffic policer comprises a flow

search engine for classifying the plurality of frames based upon one or more properties associated with the frames (*see page 182, left column, discussion pertaining packet parsing and classification or page 183, left column, discussion pertaining hardware classifier (HC)*).

Regarding **claim 9** in addition to features recited in base claim 8 (see rationales discussed above), Allen also discloses wherein the flow search engine comprises a content addressable memory (CAM) (*CAM is discussed on page 179, right column*).

Regarding **claim 10** in addition to features recited in base claim 8 (see rationales discussed above), Allen also discloses wherein one or more properties comprise a source port, a VLAN tag state, a VLAN identifier, and a VLAN tag control information (TCI) field (classifying based on VLAN tag is discussed on page 183, right column, first paragraph).

Regarding **claim 11** in addition to features recited in base claim 8 (see rationales discussed above), Allen also discloses wherein the CAM associated with each of the plurality of data link layer processors consists of QoS rules pertaining to the associated plurality of physical layer interfaces (*see page 183, left column, discussion pertaining tables*).

Regarding **claim 12** in addition to features recited in base claim 2 (see rationales discussed above), Allen also discloses wherein data link layer processors are media access controller (MAC) processors (*see Fig. 3 and description on page 179, left column*).

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Regarding **claim 13** in addition to features recited in base claim 12 (see rationales discussed above), Allen also discloses wherein each of the MAC processors further comprises a MAC buffer for buffering frames not discard by the traffic policer (see *Figure 4; Ingress data store*).

Regarding **claim 14** in addition to features recited in base claim 2 (see rationales discussed above), Allen also discloses wherein the switching device is selected from the group consisting of: a router, a multi-layer switching device, and a switch blade (see *Fig. 3 and description on page 179, left column*).

Conclusion

8. The prior/related art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kadambi et al (USP 6,104,696).

Heinanen et al, A Single Rate Three Color Marker, RFC 2697, pages 1-6, September 1999.

Heinanen et al, A Two Rate Three Color Marker, RFC 2698, pages 1-5, September 1999.

Mancour et al (Patent Application Publication 2005/0078602).

Narsinh et al (Patent Application Publication 2005/0201415).

Narsinh et al (Patent Application Publication 2005/0198258).

9. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Frank Duong whose telephone number is 571-272-3164. The examiner can normally be reached on 7:00AM-3:30PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



FRANK DUONG
PRIMARY EXAMINER

July 26, 2007